

ABSTRACT

A plurality of parts are brazed using an iron/chromium brazing filler metal. The parts are preferably composed of stainless steel and the brazed assembly forms a heat exchanger characterized by good corrosion resistance and low rates of leaching of Ni into fluids passing therethrough. The heat exchanger is especially suited for use in processing items intended to be ingested by humans or animals. Leaching rates and corrosion resistance are further enhanced by a post-brazing conditioning step wherein the assembly is heated in an oxygen-containing atmosphere to a temperature ranging from about 150° to 600°C. The preferred iron/chromium brazing filler metal consists essentially of a composition having the formula $\text{Fe}_a\text{Cr}_b\text{Co}_c\text{Ni}_d\text{Mo}_e\text{W}_f\text{B}_g\text{Si}_h$ wherein the subscripts "a", "b", "c", "d", "e", "f", "g", and "h" are in atom percent and wherein, "b" ranges from about 5 to 20, "c" ranges from 0 to about 30, "d" ranges from 0 to about 20, "e" ranges from 0 to about 5, "f" ranges from 0 to about 5, "g" ranges from about 8 to 15, "h" ranges from about 8 to 15, and the sum "a"+"b"+"c"+"d"+"e"+"f"+"g"+"h"=100, the balance being incidental impurities present in an amount up to about 1 percent by weight of the total composition.